

What Is Claimed Is:

1. A method for performing multi-hop peer-to-peer telecommunications on a wireless network, which includes a plurality of radio terminals, and topology of which changes moment by moment and, comprising the steps in which:

each radio terminal exchanges the link state with radio terminals capable of direct communications (said link state including only information on radio terminals within a predetermined number of hops), and constructs a routing table;

a packet is prepared including a routing stack for storing intermediate routing information therefor whenever the packet passes through the terminals;

a sender terminal designates a destination terminal to broadcast said packet;

the radio terminals on the route, which receive said packet, write the intermediate routing information to said routing stack while transferring said packet to all radio terminals based on said routing table;

the destination terminal which receives said packet returns said packet to said sender terminal through the route followed by said packet based on information in said routing stack; and

said sender terminal which receives said packet unicasts a message to said destination terminal through the radio terminals on said route based on information in said routing stack included in said packet.

2. The method for performing multi-hop peer-to-peer telecommunications according to Claim 1, wherein said intermediate routing information includes the link ID and/or Identity showing the route; and said link ID and/or Identity is uniform among terminals which can communicate directly, but is not globally uniform.

3. The method for performing multi-hop peer-to-peer telecommunications according to Claim 2 wherein a specific number and/or symbol is reserved as said link ID and/or Identity showing that

predetermined hop range from a terminal's own routing table;
 sending the extracted link state relating to the terminal
 to the partner terminal;
 storing the link state received from said partner terminal
 5 to the terminal's own routing table; and
 repeating the above steps after the passage of a prescribed
 period of time.

7. The telecommunications method for radio terminals
 10 according to Claim 5, wherein said source routing demand packet
 transfer step comprises the steps of:
 storing route information within said packet;
 storing the local link ID and/or Identity of a terminal in
 said routing stack;
 15 moving the pointer of said routing stack; and
 sending said packet to each terminal that is capable of
 direct communications.

8. The telecommunications method for radio terminals
 20 according to Claim 5, wherein said source routing demand packet
 transfer step comprises a step for stopping the transfer process when
 said routing stack is full.

9. The telecommunications method for radio terminals
 25 according to Claim 5, wherein said source routing demand packet return
 step comprises the steps of:
 putting back the pointer of said routing stack;
 retrieving the link ID and/or Identity from said routing
 stack; and
 30 sending the packet to one terminal based on said link ID
 and/or Identity.

10. The telecommunications method for radio terminals
 according to Claim 5, wherein said source routing demand packet return
 35 step includes a routing stack reconstruction step for reconstructing
 said routing stack when it is found that the link with the transfer

a transfer step wherein said packet is transferred to the prescribed terminal based on the intermediate routing information in the routing stack included in said packet and the contents of said routing table, when the received packet is not addressed to itself;

5 a source routing demand packet transfer step wherein, when the received packet is a source routing demand packet and is broadcast, the intermediate routing information is written to said routing stack included in said packet, while transferring said packet to all radio terminals based on said routing table; and

10 a source routing demand packet return step wherein, when the received packet is a source routing demand packet and undergoes sendback unicast from the sender terminal to the sender terminal, said packet is transferred to the prescribed terminal based on the intermediate routing information in said routing stack included in
15 said packet and the contents of said routing table.